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L113 ANSWER 1 OF 11 HCPLUS COPYRIGHT 2008 ACS on STN  
AN 2006:658402 HCPLUS Full-text  
DN 145:106934  
TI Electrode plate containing crosslinked binder for lithium sulfur battery  
IN Han, Ji Seong; Jung, Yong Ju; Kim, Jan Di; Kim, Seok  
PA Samsung Sdi Co., Ltd., S. Korea  
SO Repub. Korean Kongkiae Taeho Kongbo, No pp. given  
CODEN: KRXXA7  
DT Patent  
LA Korean  
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI KR 2004009328	A	20040131	KR 2002-43249	20020723 <--
PRAI KR 2002-43249		20020723		
AB An electrode plate for a lithium sulfur battery, its preparation method and a lithium sulfur battery containing the electrode plate are provided, to improve the energy d. and the lifetime characteristic of a lithium sulfur battery by employing a crosslinked binder having excellent chemical resistance and binding force. The electrode plate comprises the polymer binder which is insol. in an electrolyte solution and is crosslinked by the heat or the irradiation of an UV ray or an elec. beam. Preferably the crosslinked polymer binder is the poly(vinyl pyrrolidone). Preferably a crosslinking initiator is added when the polymer binder is crosslinked, and the initiator is the 4,4'-diazidostilbene-2,2'-disulfonic acid sodium salt tetrahydrate. Preferably the degree of swelling of the binder is 20 % or less.				
ICM 801M0004-66				
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)				
ST electrode plate contg crosslinked binder lithium sulfur battery				
IT Binders				

(crosslinked; electrode plate containing crosslinked binder for lithium sulfur battery and lithium sulfur battery containing electrode plate)

IT Secondary batteries

Swelling, physical  
(electrode plate containing crosslinked binder for lithium sulfur battery and lithium sulfur battery containing electrode plate)

IT 2718-90-3, 4,4'-Diazidostilbene-2,2'-disulfonic acid sodium salt  
7439-93-2, Lithium, uses 9003-39-8, Poly(vinyl pyrrolidone)

RL: TEM (Technical or engineered material use); USES (Uses)  
(electrode plate containing crosslinked binder for lithium sulfur battery and lithium sulfur battery containing electrode plate)

IT 7439-93-2, Lithium, uses

RL: TEM (Technical or engineered material use); USES (Uses)  
(electrode plate containing crosslinked binder for lithium sulfur battery and lithium sulfur battery containing electrode plate)

RN 7439-93-2 HCPLUS

CN Lithium (CA INDEX NAME)

Li

L113 ANSWER 2 OF 11 HCPLUS COPYRIGHT 2008 ACS on STN  
 AN 2004:1026264 HCPLUS Full-text  
 DN 142:23764  
 TI Ion-conducting thermally convertible polymeric material and polymerized compound for its production  
 IN Mokrousov, G. M.; Izaak, T. I.; Gavrilenko, N. A.  
 PA Tomskii Gosudarstvennyi Universitet, Russia  
 SO Russ., No pp. given  
 CODEN: RUXXE7  
 DT Patent  
 LA Russian  
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI RU 2241282	C2	20041127	RU 2000-129845	20001128 <--
PRAI RU 2000-129845		20001128		<--
AB	Ion-conducting thermally convertible polymeric material and polymerized compound for its production as solid-state ion conductors or polymeric electrolytes are described. The proposed compound for producing ion-conducting thermally convertible polymeric materials has in its composition alkyl and/or allyl ester of methacrylic acid that functions as monomer that incorporated in alkyl radical 1 - 16 atoms of carbon and one or more salts of s-, p-, d-, and f-metals of halide-substituted low aliphatic carbonic acid having 1 - 4 atoms of carbon and/or ammonium trifluoroacetate in alkyl radical with low carbonic acids incorporating 1 - 6 atoms of carbon in alkyl radical added or not to them, remaining chelate-forming organic compds. that incorporate heteroatom of nitrogen, or sulfur being added or not to them. In addition it has salts of s- and/or p-metal of alkyl and/or alkynyl-acrylic acid, and/or organic component composed of one or more low-mol. substances each incorporating in its composition at least two functional groups of OH, NHx, CS, COOH, CO and/or polar solvents capable of dissolving both mentioned			

salts of halide-substituted low aliphatic carbonic acid and mentioned salts of alkyl and/or alkenyl-acrylic acid, proportion of components being as follows: 10-4 - 2 mol/l of monomeric mixture of mentioned salts of halide-substituted low aliphatic carbonic acid; 0.01 - 0.1 mol fractions of salt of *s*- and/or *p*-metal of alkyl and/or alkenyl-acrylic acid, or 0.1 - 0.55 mol fractions of mentioned organic components, or mixture thereof; and the rest of monomer of mentioned composition. In addition description is given of ion-conducting thermally convertible polymeric material produced from polymeric compound and ion-conducting polymeric film produced from thermally convertible polymeric material. Transparent ion-conducting material produced in the process has elec. conductivity as high as 10-4 to 10-5S/cm at room temperature with desired characteristics of material being retained. **EFFECT:** enhanced elec. conductivity of material, that is enhanced conductivity and stability of gel-electrolyte produced in the process.

IC IGM B91M0006-16

ICS H01M0006-18; H01M0010-40; C08L0033-10;  
C08J0005-18

## CC 36-5 (Physical Properties of Synthetic High Polymers)

Section cross-reference(s): 52, 76

## IT Ionic conductors

## Polymer electrolytes

## Solid electrolytes

(ion-conducting thermally convertible polymeric material)

IT 57-13-6, Urea, processes 60-00-4, EDTA, processes 67-68-5, DMSO, processes 68-12-2, Dimethylformamide, processes 75-05-8, Acetonitrile, processes 75-12-7, Formamide, processes 79-41-4, Methacrylic acid, processes 80-62-6, Methylmethacrylate 107-21-1, Ethylene glycol, processes 108-32-7, Propylene carbonate 123-39-7, N-Methylformamide 124-04-9, Adipic acid, processes 124-09-4, Hexamethylenediamine, processes 144-62-7, Oxalic acid, processes 2923-16-2, Potassium trifluoroacetate 2923-17-3, Lithium trifluoroacetate 3336-58-1, Ammonium trifluoroacetate 6990-35-2, Potassium methacrylate 9004-57-3, Ethylcellulose 21907-47-1, Zinc trifluoroacetate 25322-68-3, Polyethylene glycol  
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent) (i.e. conductive, thermally convertible, polymeric material comprising)

IT-24-36-8. Bismuth monoxide, processed

94-36-9, Benzoyl peroxide, processes  
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PCT (Reactant); PROC (Process); PACT (Reactant or reagent)

(process), RCI (Reactant), RPOC (Process), RACI (Reactant or Reagent) (polymerization initiator; use in preparation of ion-conducting thermally convertible polymeric material)

IT 79-41-4. Methacrylic acid; processes 80-62-6.

Methylmethacrylate 197-21-1. Ethylene glycol. Processes

2-methylmethacrylate 20: 22-1, Ethylene glycol, 2923-17-3, Lithium trifluoroacetate 6300-35-2

Potassium methacrylate 25322-68-3 Polyethylene glycol

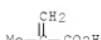
PI: CBS (Chemical process); PEP (Physical engineering of processes).

RE: CFS (Chemical process); FEF (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)

(ion-conducting thermally convertible polymeric material comprising

BN 78-41-4 HUNGARIUS

RN 79-41-4 HCAPLUS  
CN 3-Branapinic acid, 3-methyl (CA INDEX NAME)



BN 80-62-6 HCAPLUS

CA INDEX NAME: 2-Propenoic acid, 2-methyl-, methyl ester



RN 107-21-1 HCAPLUS  
 CN 1,2-Ethanediol (CA INDEX NAME)

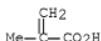


RN 2923-17-3 HCAPLUS  
 CN Acetic acid, 2,2,2-trifluoro-, lithium salt (1:1) (CA INDEX NAME)



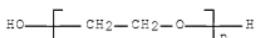
● Li

RN 6900-35-2 HCAPLUS  
 CN 2-Propenoic acid, 2-methyl-, potassium salt (1:1) (CA INDEX NAME)



● K

RN 25322-68-3 HCAPLUS  
 CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -hydro- $\omega$ -hydroxy- (CA INDEX NAME)



IT 94-36-0, Benzoyl peroxide, processes  
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)  
 (polymerization initiator; use in preparation of ion-conducting thermally convertible polymeric material)  
 RN 94-36-0 HCAPLUS  
 CN Peroxide, dibenzoyl (CA INDEX NAME)



L113 ANSWER 3 OF 11 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2004:252055 HCAPLUS Full-text

DN 140:256340

TI Anodes for lithium battery

IN Kim, Yong-tae; Choi, Su-suk; Choi, Yun-suk; Lee, Kyoung-hee

PA Samsung Sdi Co., Ltd., S. Korea

SO U.S. Pat. Appl. Publ., 10 pp.

CODEN: USXXCO

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 20040058232	A1	20040325	US 2003-664157	20030917 <--
	KR 2004026208	A	20040330	KR 2002-57577	20020923 <--
	JP 2004119372	A	20040415	JP 2003-308015	20030829 <--
	CN 1492523	A	20040428	CN 2003-158726	20030922 <--
PRAI	KR 2002-57577	A	20020923	<--	

AB A lithium neg. electrode for a lithium battery has good cycle life and capacity characteristics. The lithium neg. electrode comprises a lithium metal layer and a protective layer present on the lithium metal layer, where the protective layer includes an organosulfur compound. An organosulfur compound having a thiol terminal group is preferred since such a compound can form a complex with lithium metal to enable coating to be carried out easily. The organosulfur compound has a large number of S or N elements having high electronegativity to form a complex with lithium ions, so it renders lithium ions to be deposited relatively evenly on the lithium metal surface, reducing dendrite formation.

IC ICM H01M0002-16

ICS H01M0004-66; H01M0004-40

INCL 429137000; 429246000; 429245000; 429212000; 429231950

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

Section cross-reference(s): 38

ST anode lithium battery

IT Chalcogenides

Oxides (inorganic), uses

RL: DEV (Device component use); USES (Uses)  
(Li-containing; anodes for lithium battery)

IT Peroxides, uses

RL: MOA (Modifier or additive use); USES (Uses)  
(acyl; anodes for lithium battery)

IT Hydroperoxides

RL: MOA (Modifier or additive use); USES (Uses)  
(alkyl, tertiary; anodes for lithium battery)

IT Peroxides, uses

RL: MOA (Modifier or additive use); USES (Uses)  
(alkyl; anodes for lithium battery)

IT Battery anodes

Coating materials

Conducting polymers  
(anodes for lithium battery)

IT Acrylic polymers, uses

Polyanilines

Polyoxyalkylenes, uses

RL: MOA (Modifier or additive use); USES (Uses)  
(anodes for lithium battery)

IT Amino acids, uses  
Halogens  
Lewis acids  
Rare earth chlorides  
Sulfonic acids, uses  
Transition metal compounds  
RL: MOA (Modifier or additive use); USES (Uses)  
(dopant; anodes for lithium battery)

IT Primary batteries  
Secondary batteries  
(lithium; anodes for lithium battery)

IT Esters, uses  
Ketals  
RL: MOA (Modifier or additive use); USES (Uses)  
(peroxy; anodes for lithium battery)

IT Crown ethers  
Polybenzimidazoles  
Polyquinolines  
Polyquinoxalines  
RL: MOA (Modifier or additive use); USES (Uses)  
(thiophenes, polymers; anodes for lithium battery)

IT 110-71-4 111-96-6, Diglyme 126-33-0, Sulfolane 646-06-0,  
1,3-Dioxolane 7439-93-2, Lithium, uses  
7764-34-9, Sulfur, uses  
RL: DEV (Device component use); USES (Uses)  
(anodes for lithium battery)

IT 67-63-0, Isopropyl alcohol, uses 75-91-2, tert-Butyl  
hydroperoxide 78-63-7, 2,5-Dimethyl-2,5-di-(tert-  
butylperoxy)hexane 78-67-1, Azobisisobutyronitrile  
80-15-9, Cumene hydroperoxide 80-43-3, Dicumyl peroxide  
94-36-0, Dibenzoyl peroxide, uses 105-74-8, Dilauroyl  
peroxide 110-05-4, Di-tert-butyl peroxide 123-23-9,  
Succinic acid peroxide 762-12-9, Didecanoyl peroxide  
927-07-1, tert-Butylperoxyvalate 2167-23-9,  
2,2-Di-(tert-butylperoxy)butane 3025-88-5, 2,5-Dihydroperoxy-2,-  
dimethylhexane 4511-39-1, tert-Amylperoxybenzoate  
15667-10-4, 1,1-Di-(tert-amylperoxy)cyclohexane 16066-38-9  
, Di(n-propyl)peroxy dicarbonate 16111-62-9,  
Di(2-ethylhexyl)peroxy dicarbonate 19910-65-7,  
Di(sec-butyl)peroxy dicarbonate 24937-05-1, Poly(ethylene adipate)  
24938-43-0, Poly( $\beta$ -propiolactone) 24965-06-0,  
Polyepichlorohydrin 25190-62-9, Poly(p-phenylene) 25233-30-1,  
Polyaniline 25233-30-1D, Polyaniline, sulfonated 25233-34-5,  
Polythiophene 25233-34-5D, Polythiophene, derivs. 25322-68-3,  
Peo 25322-69-4, Polypropylene oxide 25667-11-2,  
Poly(ethylenesuccinate) 25721-76-0, Polyethylene glycol  
dimethacrylate 25852-49-7, Polypropylene glycol dimethacrylate  
26570-48-9, Poly(ethylene glycol diacrylate) 26748-47-6,  
 $\alpha$ -Cumylperoxyneodecanoate 33099-48-4, Peroxydicarbonate  
52496-09-9, Poly(propylene glycol diacrylate) 55794-20-2,  
Ethyl 3,3-di-(tert-butylperoxy)butyrate 95732-35-7 97332-10-0,  
Poly(N-propylaziridine) 139096-57-4, Isoquinoline homopolymer  
172973-34-1  
RL: MOA (Modifier or additive use); USES (Uses)  
(anodes for lithium battery)

IT 865-44-1, Iodine trichloride 1493-13-6, Triflic acid 7446-11-9,  
Sulfur trioxide, uses 7550-45-0, Titanium chloride (TiCl<sub>4</sub>)  
(T-4)-, uses 7553-56-2, Iodine, uses 7601-90-3, Perchloric acid, uses

7637-07-2, uses 7647-01-0, Hydrochloric acid, uses 7647-19-0, Phosphorus pentafluoride 7664-39-3, Hydrofluoric acid, uses 7664-93-9, Sulfuric acid, uses 7697-37-2, Nitric acid, uses 7705-08-0, Ferric chloride, uses 7721-01-9, Tantalum chloride (TaC15) 7726-95-6, Bromine, uses 7782-44-7, Oxygen, uses 7782-50-5, Chlorine, uses 7783-68-8, Niobium fluoride nbf5 7783-70-2, Antimony pentafluoride 7783-81-5 7783-82-6 7783-93-9, Silver perchlorate 7784-36-3, Arsenic pentafluoride 7789-21-1, Fluorosulfonic acid 7789-33-5, Iodine monobromide 7790-94-5, Chlorosulfonic acid 7790-99-0, Iodine monochloride 10026-11-6 10026-12-7, Niobium chloride (NbC15) 10277-43-7, Lanthanum nitrate hexahydrate 10294-33-4, Boron tribromide 10294-34-5 13283-01-7 13499-05-3 13709-32-5, Bis(fluorosulfonyl)peroxide 13774-85-1 13819-84-6, Molybdenum fluoride mof5 13870-10-5, Iron chloride oxide feocl 13873-84-2, Iodine monofluoride 14635-75-7, Nitrosyl tetrafluoroborate 14797-73-0, Perchlorate 14874-70-5, Tetrafluoroborate 16871-80-0, Nitrosyl hexachloroantimonate 16887-00-6, Chloride, uses 16919-18-9, Hexafluorophosphate 16941-92-7, Hexachloroiridic acid 16973-45-8, Hexafluoroarsenate 17111-95-4 17856-92-7 20461-54-5, Iodide, uses 24959-67-9, Bromide, uses 25321-43-1, Octylbenzenesulfonic acid 27176-87-0, Dodecylbenzene sulfonic acid

RL: MOA (Modifier or additive use); USES (Uses)  
(dopant; anodes for lithium battery)

IT 540-63-6, 1,2-Ethanedithiol 1072-71-5, 2,5-Dimercapto-1,3,4-thiadiazole 2001-93-6, 2,4-Dimercaptopyrimidine 2150-02-9, Bis(2-mercaptopethyl)ether 3570-55-6, Bis(2-mercaptopethyl)sulfide 9002-98-6 9002-98-6D, derivs. 37306-44-8D, Triazole, mercapto derivs 131538-50-6 135886-78-1 135886-79-2

RL: TEM (Technical or engineered material use); USES (Uses)  
(protective coating; anodes for lithium battery)

IT 7704-34-3D, Sulfur, organosulfur compound

RL: TEM (Technical or engineered material use); USES (Uses)  
(protective layer; anodes for lithium battery)

IT 273-77-8, 1,2,3-Benzothiadiazole 612-79-3, 6,6'-Biquinoline 25013-01-8, Polypyridine 25013-01-8D, Polypyridine, derivs. 26856-35-9, Dihydrophenanthrene 27986-50-1, Poly(1,3-cyclohexadiene) 30604-81-0, Polypyrrrole 30604-81-0D, Polypyrrrole, derivs. 51937-67-8, Polyferrocene 71730-08-0, Polyanthraquinone 136902-52-8, 2,2'-Bipyridine homopolymer 136902-52-8D, 2,2'-Bipyridine homopolymer, derivs. 190201-51-5, Pyrimidine homopolymer 190201-57-1, 1,5-Naphthyridine homopolymer

RL: MOA (Modifier or additive use); USES (Uses)  
(thiophenes, polymers; anodes for lithium battery)

IT 7439-93-2, Lithium, uses 7704-34-9, Sulfur, uses

RL: DEV (Device component use); USES (Uses)  
(anodes for lithium battery)

RN 7439-93-2 HCPLUS

CN Lithium (CA INDEX NAME)

LI

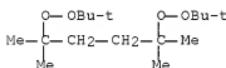
RN 7704-34-9 HCPLUS  
CN Sulfur (CA INDEX NAME)

S

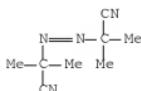
IT 75-91-2, tert-Butyl hydroperoxide 78-63-7,  
 2,5-Dimethyl-2,5-di-(tert-butylperoxy)hexane 78-67-1,  
 Azobisisobutyronitrile 80-15-9, Cumene hydroperoxide  
 80-43-3, Dicumyl peroxide 94-36-0, Dibenzoyl peroxide,  
 uses 105-74-8, Dilauroyl peroxide 110-05-4,  
 Di-tert-butyl peroxide 123-33-9, Succinic acid peroxide  
 762-12-9, Didecanoyl peroxide 927-07-1,  
 tert-Butylperoxypivalate 2167-23-9, 2,2-Di-(tert-  
 butylperoxy)butane 3025-88-5, 2,5-Dihydroperoxy-2,5-  
 dimethylhexane 4511-29-1, tert-Amylperoxybenzoate  
 15667-10-4, 1,1-Di-(tert-amylperoxy)cyclohexane 16066-38-9  
 , Di(n-propyl)peroxy dicarbonate 16111-62-9,  
 Di(2-ethylhexyl)peroxy dicarbonate 19910-65-7,  
 Di(sec-butyl)peroxy dicarbonate 24969-06-0, Polyepichlorohydrin  
 25322-68-3, Peo 25322-69-4, Polypropylene oxide  
 25721-76-0, Polyethylene glycol dimethacrylate 25852-49-7  
 , Polypropylene glycol dimethacrylate 26570-48-9, Poly(ethylene  
 glycol diacrylate) 26748-47-0,  $\alpha$ -Cumylperoxyneodecanoate  
 34099-48-4, Peroxydicarbonate 52496-08-9,  
 Poly(propylene glycol diacrylate) 55794-20-2, Ethyl  
 3,3-di-(tert-butylperoxy)butyrate 95732-35-7  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (anodes for lithium battery)  
 RN 75-91-2 HCAPLUS  
 CN Hydroperoxide, 1,1-dimethylethyl (CA INDEX NAME)



RN 78-63-7 HCAPLUS  
 CN Peroxide, 1,1'-(1,1,4,4-tetramethyl-1,4-butanediyl)bis[2-(1,1-  
 dimethylethyl)] (CA INDEX NAME)



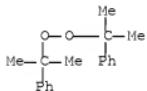
RN 78-67-1 HCAPLUS  
 CN Propanenitrile, 2,2'-(1,2-diazenediyl)bis[2-methyl- (CA INDEX NAME)



RN 80-15-9 HCAPLUS  
 CN Hydroperoxide, 1-methyl-1-phenylethyl (CA INDEX NAME)



RN 80-43-3 HCAPLUS  
 CN Peroxide, bis(1-methyl-1-phenylethyl) (CA INDEX NAME)



RN 94-36-0 HCAPLUS  
 CN Peroxide, dibenzoyl (CA INDEX NAME)



RN 105-74-8 HCAPLUS  
 CN Peroxide, bis(1-oxododecyl) (CA INDEX NAME)



RN 110-05-4 HCAPLUS  
 CN Peroxide, bis(1,1-dimethylethyl) (CA INDEX NAME)



RN 123-23-9 HCAPLUS  
 CN Butanoic acid, 4,4'-dioxybis[4-oxo- (CA INDEX NAME)



RN 762-12-9 HCAPLUS

CN Peroxide, bis(1-oxodecyl) (CA INDEX NAME)



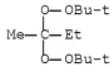
RN 927-07-1 HCAPLUS

CN Propaneperoxoic acid, 2,2-dimethyl-, 1,1-dimethylethyl ester (CA INDEX NAME)



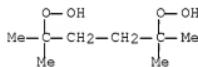
RN 2167-23-9 HCAPLUS

CN Peroxide, 1,1'-(1-methylpropylidene)bis[2-(1,1-dimethylethyl)] (CA INDEX NAME)



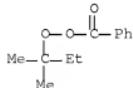
RN 3025-88-5 HCAPLUS

CN Hydroperoxide, 1,1'-(1,1,4,4-tetramethyl-1,4-butanediyl)bis- (CA INDEX NAME)



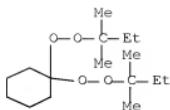
RN 4511-39-1 HCAPLUS

CN Benzenecarperoxoic acid, 1,1-dimethylpropyl ester (CA INDEX NAME)

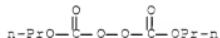


RN 15667-10-4 HCAPLUS

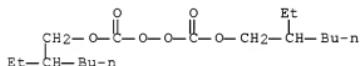
CN Peroxide, 1,1'-cyclohexylidenebis[2-(1,1-dimethylpropyl)] (CA INDEX NAME)



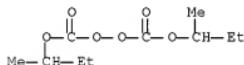
RN 16066-38-9 HCPLUS  
 CN Peroxydicarbonic acid, C,C'-dipropyl ester (CA INDEX NAME)



RN 16111-62-9 HCPLUS  
 CN Peroxydicarbonic acid, C,C'-bis(2-ethylhexyl) ester (CA INDEX NAME)



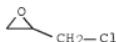
RN 19910-65-7 HCPLUS  
 CN Peroxydicarbonic acid, C,C'-bis(1-methylpropyl) ester (CA INDEX NAME)



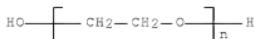
RN 24969-06-0 HCPLUS  
 CN Oxirane, 2-(chloromethyl)-, homopolymer (CA INDEX NAME)

CM 1

CRN 106-89-8  
 CMF C3 H5 Cl O



RN 25322-68-3 HCPLUS  
 CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -hydro- $\omega$ -hydroxy- (CA INDEX NAME)



RN 25322-69-4 HCPLUS

CN Poly[oxy(methyl-1,2-ethanediyl)],  $\alpha$ -hydro- $\omega$ -hydroxy- (CA INDEX NAME)

RN 25721-76-0 HCPLUS

CN 2-Propenoic acid, 2-methyl-, 1,1'-(1,2-ethanediyl) ester, homopolymer (CA INDEX NAME)

CM 1

CRN 97-90-5

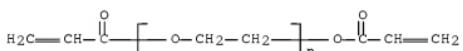
CMF C10 H14 O4



RN 25852-49-7 HCPLUS

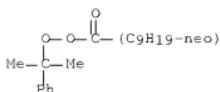
CN Poly[oxy(methyl-1,2-ethanediyl)],  $\alpha$ -(2-methyl-1-oxo-2-propen-1-yl)- $\omega$ -(2-methyl-1-oxo-2-propen-1-yl)oxy- (CA INDEX NAME)

RN 26570-48-9 HCPLUS

CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -(1-oxo-2-propen-1-yl)- $\omega$ -(1-oxo-2-propen-1-yl)oxy- (CA INDEX NAME)

RN 26748-47-0 HCPLUS

CN Neodecaneperoxoic acid, 1-methyl-1-phenylethyl ester (CA INDEX NAME)



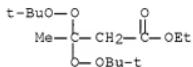
RN 34099-48-4 HCAPLUS  
 CN Peroxydicarbonate (CA INDEX NAME)



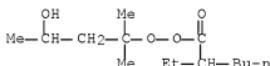
RN 52496-08-9 HCAPLUS  
 CN Poly[oxy(methyl-1,2-ethanediyl)],  $\alpha$ -(1-oxo-2-propen-1-yl)- $\omega$ -(1-oxo-2-propen-1-yl)oxy] (CA INDEX NAME)



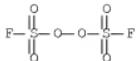
RN 55794-20-2 HCAPLUS  
 CN Butanoic acid, 3,3-bis[(1,1-dimethylethyl)dioxy]-, ethyl ester (CA INDEX NAME)



RN 95732-35-7 HCAPLUS  
 CN Hexaneperoxoic acid, 2-ethyl-, 3-hydroxy-1,1-dimethylbutyl ester (CA INDEX NAME)



IT 13709-32-5, Bis(fluorosulfonyl)peroxide  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (dopant; anodes for lithium battery)  
 RN 13709-32-5 HCAPLUS  
 CN Peroxydisulfuryl fluoride (6CI, 8CI, 9CI) (CA INDEX NAME)



IT 7704-34-9D, Sulfur, organosulfur compound  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (protective layer; anodes for lithium battery)  
 RN 7704-34-9 HCPLUS  
 CN Sulfur (CA INDEX NAME)

S

L113 ANSWER 4 OF 11 HCPLUS COPYRIGHT 2008 ACS on STN  
 AN 2004:182343 HCPLUS Full-text

DN 140:202488

TI Polymer electrolyte for lithium secondary battery with  
 improved safety and reduced swelling

IN Lee, Yong-beom

PA Samsung Sdi Co.,ltd., S. Korea

SO U.S. Pat. Appl. Publ., 8 pp.

CODEN: USXXCO

DT Patent

LA English

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20040043298	A1	20040304	US 2003-440245	20030519 <--
KR 2004020631	A	20040309	KR 2002-52280	20020831 <--
CN 1479401	A	20040303	CN 2003-152463	20030704 <--
PRAI KR 2002-52280	A	20020831	<--	

AB The invention concerns a polymer electrolyte that extends the cycle life, improves the safety, and reduces the swelling of a battery, compared with a polymer electrolyte containing a poly(alkylene oxide) polymer. Also, a lithium battery utilizes the polymer electrolyte. The polymer electrolyte contains a polymerized product from a polymer electrolyte forming composition containing a multifunctional isocyanurate monomer of a particular structure, a lithium salt, and a nonaq. organic solvent.

IC ICM H01M0006-18

INCL 429323000

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

Section cross-reference(s): 38

ST polymer electrolyte lithium secondary battery improved  
 safety reduced swelling

IT Peroxides, processes

RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)  
 (acyl, polymerization initiator; polymer electrolyte for  
 lithium secondary battery with improved safety and  
 reduced swelling)

IT Peroxides, processes

RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)

(alkyl, polymerization initiator; polymer electrolyte for lithium secondary battery with improved safety and reduced swelling)

IT Hydroperoxides  
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)  
 (alkyl, tertiary, polymerization initiator; polymer electrolyte for lithium secondary battery with improved safety and reduced swelling)

IT Secondary batteries  
 (lithium; polymer electrolyte for lithium secondary battery with improved safety and reduced swelling)

IT Esters, processes  
 Ketals  
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)  
 (peroxy, polymerization initiator; polymer electrolyte for lithium secondary battery with improved safety and reduced swelling)

IT Carbonates, processes  
 Peroxides, processes  
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)  
 (peroxycarbonates, polymerization initiator; polymer electrolyte for lithium secondary battery with improved safety and reduced swelling)

IT Battery electrolytes  
 Polymerization catalysts  
 Safety  
 Swelling, physical  
 (polymer electrolyte for lithium secondary battery with improved safety and reduced swelling)

IT Carbon fibers, uses  
 Carbonaceous materials (technological products)  
 RL: DEV (Device component use); USES (Uses)  
 (polymer electrolyte for lithium secondary battery with improved safety and reduced swelling)

IT Azo compounds  
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)  
 (polymerization initiator; polymer electrolyte for lithium secondary battery with improved safety and reduced swelling)

IT Lithium alloy, base  
 RL: DEV (Device component use); USES (Uses)  
 (polymer electrolyte for lithium secondary battery with improved safety and reduced swelling)

IT 96-47-9, 2-Methyltetrahydrofuran 96-48-0,  $\gamma$ -Butyrolactone  
 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 107-31-3, Methyl formate 108-32-7, Propylene carbonate 109-94-4, Ethyl formate 109-99-9, Thf, uses 112-49-2, Triglyme 143-24-8, Tetraglyme 462-06-6, Fluorobenzene 616-38-6, Dimethyl carbonate 4824-75-3, Butylmethyl carbonate 7429-93-2, Lithium, uses 7704-34-9, Sulfur, uses 7704-34-9D, Sulfur, compds. 7782-42-5, Graphite, uses 7791-03-9, Lithium perchlorate 12190-79-3, Cobalt lithium oxide colloid 14203-07-9, Lithium tetrafluoroborate 2124-10-3, Lithium hexafluorophosphate 27858-05-5, Difluorobenzene 29335-35-1, Lithium hexafluoroarsenate 33454-32-9, Lithium triflate 35363-40-7, Ethyl propylcarbonate, uses 39300-70-4, Lithium nickel oxide

39457-42-6, Lithium manganese oxide 51177-06-1  
, Chromium lithium oxide 52627-24-4, Cobalt  
lithium oxide 56525-42-9, Methyl propylcarbonate, uses  
73506-93-1, Diethoxyethane 90076-65-6 131651-65-5  
132843-44-8 654675-99-7, Lithium boride  
fluoride libf6  
RL: DEV (Device component use); USES (Uses)  
(polymer electrolyte for lithium secondary battery  
with improved safety and reduced swelling)  
IT 42033-33-0P, Tris(2-acryloyloxy)ethyl isocyanurate homopolymer  
90802-77-0P 93295-01-3P  
RL: DEV (Device component use); SPN (Synthetic preparation); PREP  
(Preparation); USES (Uses)  
(polymer electrolyte for lithium secondary battery  
with improved safety and reduced swelling)  
IT 15520-11-3, Di(4-tert-butylcyclohexyl)peroxy dicarbonate  
34693-48-4, Peroxydicarbonate  
RL: CPS (Chemical process); PEP (Physical, engineering or chemical  
process); PROC (Process)  
(polymerization initiator; polymer electrolyte for lithium  
secondary battery with improved safety and reduced swelling)  
IT 7439-93-2, Lithium, uses 7704-34-9,  
Sulfur, uses 7704-34-9D, Sulfur, compds.  
7791-03-9, Lithium perchlorate 12190-79-3,  
Cobalt lithium oxide colio2 14283-07-9,  
Lithium tetrafluoroborate 21324-40-3, Lithium  
hexafluorophosphate 29935-35-1, Lithium  
hexafluoroarsenate 33454-82-9, Lithium triflate  
39300-70-4, Lithium nickel oxide 39457-42-6,  
Lithium manganese oxide 51177-06-1, Chromium  
lithium oxide 52627-24-4, Cobalt lithium oxide  
90076-65-6 131651-65-5 132843-44-8  
654675-99-7, Lithium boride fluoride libf6  
RL: DEV (Device component use); USES (Uses)  
(polymer electrolyte for lithium secondary battery  
with improved safety and reduced swelling)  
RN 7439-93-2 HCPLUS  
CN Lithium (CA INDEX NAME)

Li

RN 7704-34-9 HCPLUS  
CN Sulfur (CA INDEX NAME)

S

RN 7704-34-9 HCPLUS  
CN Sulfur (CA INDEX NAME)

S

RN 7791-03-9 HCAPLUS  
 CN Perchloric acid, lithium salt (1:1) (CA INDEX NAME)

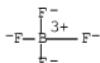


● Li

RN 12190-79-3 HCAPLUS  
 CN Cobalt lithium oxide (CoLiO<sub>2</sub>) (CA INDEX NAME)

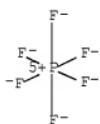
Component	Ratio	Component	Registry Number
O	2		17778-80-2
Co	1		7440-48-4
Li	1		7439-93-2

RN 14283-07-9 HCAPLUS  
 CN Borate(1-), tetrafluoro-, lithium (1:1) (CA INDEX NAME)



● Li<sup>+</sup>

RN 21324-40-3 HCAPLUS  
 CN Phosphate(1-), hexafluoro-, lithium (1:1) (CA INDEX NAME)



● Li<sup>+</sup>

RN 29935-35-1 HCAPLUS  
 CN Arsenate(1-), hexafluoro-, lithium (1:1) (CA INDEX NAME)



● Li<sup>+</sup>

RN 33454-82-9 HCAPLUS  
 CN Methanesulfonic acid, 1,1,1-trifluoro-, lithium salt (1:1) (CA INDEX  
 NAME)



● Li

RN 39300-70-4 HCAPLUS  
 CN Lithium nickel oxide (CA INDEX NAME)

Component	Ratio	Component
		Registry Number
O	x	17778-80-2
Ni	x	7440-02-0
Li	x	7439-93-2

RN 39457-42-6 HCAPLUS  
 CN Lithium manganese oxide (CA INDEX NAME)

Component	Ratio	Component
		Registry Number
O	x	17778-80-2
Mn	x	7439-96-5
Li	x	7439-93-2

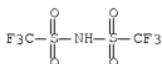
RN 51177-06-1 HCAPLUS  
 CN Chromium lithium oxide (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 52627-24-4 HCAPLUS  
 CN Cobalt lithium oxide (CA INDEX NAME)

Component	Ratio	Component
		Registry Number
O	x	17778-80-2
Co	x	7440-48-4
Li	x	7439-93-2

RN 90076-65-6 HCPLUS  
 CN Methanesulfonamide, 1,1,1-trifluoro-N-[(trifluoromethyl)sulfonyl]-, lithium salt (1:1) (CA INDEX NAME)



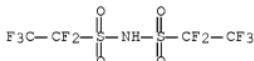
● Li

RN 131651-65-5 HCPLUS  
 CN 1-Butanesulfonic acid, 1,1,2,2,3,3,4,4,4-nonafluoro-, lithium salt (1:1) (CA INDEX NAME)



● Li

RN 132843-44-8 HCPLUS  
 CN Ethanesulfonamide, 1,1,2,2,2-pentafluoro-N-[(1,1,2,2,2-pentafluoroethyl)sulfonyl]-, lithium salt (1:1) (CA INDEX NAME)



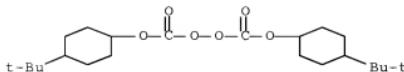
● Li

RN 654675-99-7 HCPLUS  
 CN Boron lithium fluoride (BLiF6) (CA INDEX NAME)

Component	Ratio	Component	Registry Number
F	6		14762-94-8
B	1		7440-42-8
Li	1		7439-93-2

IT 15520-11-3, Di(4-tert-butylcyclohexyl)peroxy dicarbonate  
 34059-48-4, Peroxydicarbonate  
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)  
 (polymerization initiator; polymer electrolyte for lithium secondary battery with improved safety and reduced swelling)  
 RN 15520-11-3 HCPLUS  
 CN Peroxydicarbonic acid, C,C'-bis[4-(1,1-dimethylethyl)cyclohexyl] ester

(CA INDEX NAME)



RN 34099-48-4 HCPLUS  
 CN Peroxydicarbonate (CA INDEX NAME)

-O<sub>2</sub>C—O—O—CO<sub>2</sub>—

L113 ANSWER 5 OF 11 HCPLUS COPYRIGHT 2008 ACS on STN

AN 2004:119841 HCPLUS Full-text

DN 140:166772

TI Polymer electrolyte for lithium-sulfur battery

IN Hwang, Duck-chul; Lee, Kyung-hee

PA Samsung Sdi Co., Ltd., S. Korea

SO U.S. Pat. Appl. Publ., 15 pp.

CODEN: USXXCO

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 20040029016	A1	20040212	US 2003-635122	20030806 <--
	KR 2004014163	A	20040214	KR 2003-28968	20030507 <--
	JP 2004071560	A	20040304	JP 2003-279998	20030725 <--
	CN 1495956	A	20040512	CN 2003-127275	20030807 <--
PRAI	KR 2002-46580	A	20020807	<--	
	KR 2003-28968	A	20030507	<--	
AB	Disclosed is a polymer electrolyte for a lithium sulfur battery. The electrolyte includes a monomer with a methacrylate group, an initiator, an organic solvent, and a lithium salt.				
IC	I01M0010-40				
INCL	429317000; X42-918.9; X42-930.7				
CC	52-2 (Electrochemical, Radiational, and Thermal Energy Technology) Section cross-reference(s): 38				
ST	polymer electrolyte lithium sulfur battery				
IT	Polyesters, uses				
	RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses) (hexacrylate-based; polymer electrolyte for lithium-sulfur battery)				
IT	Secondary batteries (lithium; polymer electrolyte for lithium-sulfur battery)				
IT	Intercalation compounds				
	RL: DEV (Device component use); USES (Uses) (lithium; polymer electrolyte for lithium-sulfur battery)				
IT	Alcohols, uses				

RL: DEV (Device component use); USES (Uses)  
 (polyhydric, esters; polymer electrolyte for lithium-sulfur battery)

IT Lithium alloy, base  
 RL: DEV (Device component use); USES (Uses)  
 (polymer electrolyte for lithium-sulfur battery)

IT 3087-37-4, Tetrapropyltitanate  
 RL: CAT (Catalyst use); USES (Uses)  
 (polymer electrolyte for lithium-sulfur battery)

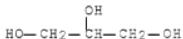
IT 56-91-5, Glycerol, uses 110-71-4 149-32-6,  
 Erythritol 646-06-0, 1,3-Dioxolane 7439-93-2,  
 lithium, uses 7439-93-2D, Lithium,  
 intercalation compound 7704-34-9, Sulfur, uses  
 7704-24-9D, Sulfur, compound 74432-42-1,  
 Lithium polysulfide 30076-65-6  
 RL: DEV (Device component use); USES (Uses)  
 (polymer electrolyte for lithium-sulfur battery)

IT 79-30-7DP, Acrylic acid, reaction product with  
 dipentaerythritol and  $\epsilon$ -caprolactone and butylcarboxylic  
 acid 126-58-9DP, Dipentaerythritol, reaction product  
 with  $\epsilon$ -caprolactone and acrylic acid and butylcarboxylic acid  
 502-44-3DP,  $\epsilon$ -Caprolactone, reaction product with  
 dipentaerythritol and acrylic acid and butylcarboxylic acid  
 10411-26-4DP, reaction product with dipentaerythritol and  
 $\epsilon$ -caprolactone and acrylic acid  
 RL: DEV (Device component use); PRP (Properties); SPN (Synthetic  
 preparation); PREP (Preparation); USES (Uses)  
 (polymer electrolyte for lithium-sulfur battery)

IT 180049-13-2, Aluminum boride nitride AlBN  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (polymer electrolyte for lithium-sulfur battery)

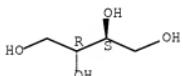
IT 75-91-2, tert-Butylhydroperoxide 78-63-7,  
 2,5-Dimethyl-2,5-di(tert-butylperoxy)hexane 78-67-1,  
 Azobisisobutyronitrile 80-15-9, Cumene hydroperoxide  
 90-43-3, Dicumyl peroxide 94-36-0, Benzoyl peroxide,  
 processes 105-64-6, Diisopropyl peroxy dicarbonate  
 105-74-9, Lauroyl peroxide 110-05-4, Di-tert-butyl  
 peroxide 1561-49-5, Dicyclo hexylperoxy dicarbonate  
 1712-97-4, m-Toluoyl peroxide 2167-23-9,  
 2,2-Di(tert-butylperoxy)butane 3006-82-4, tert-Butyl  
 peroxy-2-ethyl hexanoate 3025-88-5, 2,5-Dihydroperoxy-2,5-  
 dimethylhexane 14866-78-5 15520-11-3,  
 Bis(4-tert-butylcyclohexyl)peroxy dicarbonate 16066-38-9,  
 Di(n-propyl)peroxy-dicarbonate 16111-62-9, Di(2-  
 ethylhexyl)peroxydicarbonate 13910-65-7, Di(sec-butyl)peroxy  
 dicarbonate 26748-47-0,  $\alpha$ -Cumyl peroxy neodecanoate  
 32752-09-3, Isobutyl peroxide 52373-75-8  
 55794-20-2, Ethyl 3,3-di(tert-butylperoxy)butyrate  
 92177-99-6, 3,3,5-Trimethylhexanoyl peroxide 95732-35-7  
 116657-72-8, tert-Butyl neodecanoate 113416-46-9  
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical  
 process); PROC (Process)  
 (polymerization initiator; polymer electrolyte for lithium-sulfur battery)

IT 56-81-5, Glycerol, uses 149-32-6,  
 Erythritol 7439-93-2, Lithium, uses  
 7439-93-2D, Lithium, intercalation compound  
 7704-34-9, Sulfur, uses 7704-34-9D,  
 Sulfur, compound 74431-42-1, Lithium polysulfide  
 90076-65-6  
 RL: DEV (Device component use); USES (Uses)  
 (polymer electrolyte for lithium-sulfur  
 battery)  
 RN 56-81-5 HCAPLUS  
 CN 1,2,3-Propanetriol (CA INDEX NAME)



RN 149-32-6 HCAPLUS  
 CN 1,2,3,4-Butanetetrol, (2R,3S)-rel- (CA INDEX NAME)

Relative stereochemistry.



RN 7439-93-2 HCAPLUS  
 CN Lithium (CA INDEX NAME)

Li

RN 7439-93-2 HCAPLUS  
 CN Lithium (CA INDEX NAME)

Li

RN 7704-34-9 HCAPLUS  
 CN Sulfur (CA INDEX NAME)

S

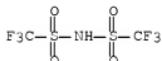
RN 7704-34-9 HCAPLUS  
 CN Sulfur (CA INDEX NAME)

S

RN 74432-42-1 HCPLUS  
 CN Lithium sulfide (Li<sub>2</sub>(Sx)) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

RN 90076-65-6 HCPLUS  
 CN Methanesulfonamide, 1,1,1-trifluoro-N-[(trifluoromethyl)sulfonyl]-, lithium salt (1:1) (CA INDEX NAME)



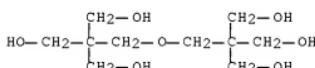
● Li

IT 79-10-7DP, Acrylic acid, reaction product with dipentaerythritol and  $\epsilon$ -caprolactone and butylcarbonic acid 126-58-9DP, Dipentaerythritol, reaction product with  $\epsilon$ -caprolactone and acrylic acid and butylcarbonic acid  
 RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
 (polymer electrolyte for lithium-sulfur battery)

RN 79-10-7 HCPLUS  
 CN 2-Propenoic acid (CA INDEX NAME)



RN 126-58-9 HCPLUS  
 CN 1,3-Propanediol, 2,2'-[oxybis(methylene)]bis[2-(hydroxymethyl)- (CA INDEX NAME)



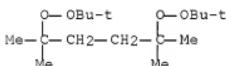
IT 75-91-2, tert-Butylhydroperoxide 78-63-7,  
 2,5-Dimethyl-2,5-di(tert-butylperoxy)hexane 78-67-1,  
 Azobisisobutyronitrile 80-15-9, Cumene hydroperoxide 80-43-3, Dicumyl peroxide 94-36-0, Benzoyl peroxide, processes 105-64-6, Diisopropyl peroxy dicarbonate 105-74-8, Lauroyl peroxide 110-05-4, Di-tert-butyl peroxide 1561-49-5, Dicyclo hexylperoxy dicarbonate 1712-87-4, m-Toluoyl peroxide 2167-23-9,

2,2-Di(tert-butylperoxy)butane 3006-82-4, tert-Butyl peroxy-2-ethyl hexanoate 3025-38-5, 2,5-Dihydroperoxy-2,5-dimethylhexane 14666-78-5 15520-11-3, Bis(4-tert-butylcyclohexyl)peroxy dicarbonate 16066-38-9, Di(n-propyl)peroxy-dicarbonate 16111-62-9, Di(2-ethylhexyl)peroxydicarbonate 19910-65-7, Di(sec-butyl)peroxy dicarbonate 26748-47-0,  $\alpha$ -Cumyl peroxy neodecanoate 32752-09-3, Isobutyl peroxide 52373-75-8 55794-20-2, Ethyl 3,3-di(tert-butylperoxy)butyrate 92177-99-6, 3,3,5-Trimethylhexanoyl peroxide 95732-35-7 116657-72-8, tert-Butyl neodecanoate 118416-46-9  
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)  
(polymerization initiator; polymer electrolyte for lithium-sulfur battery)

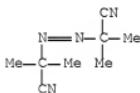
RN 75-91-2 HCAPLUS  
CN Hydroperoxide, 1,1-dimethylethyl (CA INDEX NAME)



RN 78-63-7 HCAPLUS  
CN Peroxide, 1,1'-(1,1,4,4-tetramethyl-1,4-butanediyl)bis[2-(1,1-dimethylethyl)] (CA INDEX NAME)



RN 78-67-1 HCAPLUS  
CN Propanenitrile, 2,2'-(1,2-diazenediyyl)bis[2-methyl- (CA INDEX NAME)

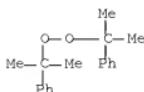


RN 80-15-9 HCAPLUS  
CN Hydroperoxide, 1-methyl-1-phenylethyl (CA INDEX NAME)



RN 80-43-3 HCAPLUS

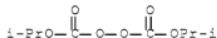
CN Peroxide, bis(1-methyl-1-phenylethyl) (CA INDEX NAME)



RN 94-36-0 HCAPLUS  
 CN Peroxide, dibenzoyl (CA INDEX NAME)



RN 105-64-6 HCAPLUS  
 CN Peroxydicarbonic acid, C,C'-bis(1-methylethyl) ester (CA INDEX NAME)



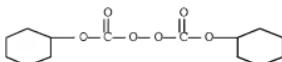
RN 105-74-8 HCAPLUS  
 CN Peroxide, bis(1-oxododecyl) (CA INDEX NAME)



RN 110-05-4 HCAPLUS  
 CN Peroxide, bis(1,1-dimethylethyl) (CA INDEX NAME)



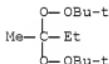
RN 1561-49-5 HCAPLUS  
 CN Peroxydicarbonic acid, C,C'-dicyclohexyl ester (CA INDEX NAME)



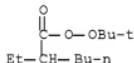
RN 1712-87-4 HCAPLUS  
 CN Peroxide, bis(3-methylbenzoyl) (CA INDEX NAME)



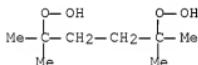
RN 2167-23-9 HCPLUS  
 CN Peroxide, 1,1'-(1-methylpropylidene)bis[2-(1,1-dimethylethyl)] (CA INDEX NAME)



RN 3006-82-4 HCPLUS  
 CN Hexaneperoxoic acid, 2-ethyl-, 1,1-dimethylethyl ester (CA INDEX NAME)



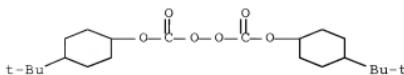
RN 3025-88-5 HCPLUS  
 CN Hydroperoxide, 1,1'-(1,1,4,4-tetramethyl-1,4-butanediyl)bis- (CA INDEX NAME)



RN 14666-78-5 HCPLUS  
 CN Peroxydicarbonic acid, diethyl ester (CA INDEX NAME)



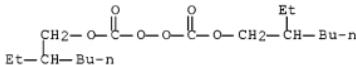
RN 15520-11-3 HCPLUS  
 CN Peroxydicarbonic acid, C,C'-bis[4-(1,1-dimethylethyl)cyclohexyl] ester (CA INDEX NAME)



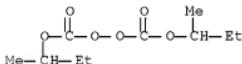
RN 16066-38-9 HCPLUS  
 CN Peroxydicarbonic acid, C,C'-dipropyl ester (CA INDEX NAME)



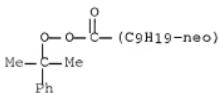
RN 16111-62-9 HCPLUS  
 CN Peroxydicarbonic acid, C,C'-bis(2-ethylhexyl) ester (CA INDEX NAME)



RN 19910-65-7 HCPLUS  
 CN Peroxydicarbonic acid, C,C'-bis(1-methylpropyl) ester (CA INDEX NAME)



RN 26748-47-0 HCPLUS  
 CN Neodecaneperoxoic acid, 1-methyl-1-phenylethyl ester (CA INDEX NAME)

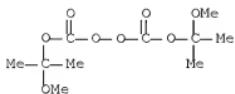


RN 32752-09-3 HCPLUS  
 CN Peroxide, bis(2-methylpropyl) (CA INDEX NAME)



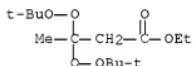
RN 52373-75-8 HCAPLUS

CN Peroxydicarbonic acid, bis(1-methoxy-1-methylethyl) ester (9CI) (CA INDEX NAME)



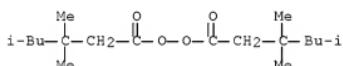
RN 55794-20-2 HCAPLUS

CN Butanoic acid, 3,3-bis[(1,1-dimethylethyl)dioxy]-, ethyl ester (CA INDEX NAME)



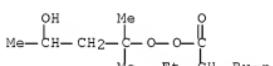
RN 92177-99-6 HCAPLUS

CN Peroxide, bis(3,3,5-trimethyl-1-oxohexyl) (9CI) (CA INDEX NAME)



RN 95732-35-7 HCAPLUS

CN Hexaneperoxoic acid, 2-ethyl-, 3-hydroxy-1,1-dimethylbutyl ester (CA INDEX NAME)



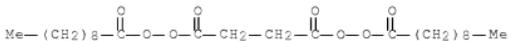
RN 116657-72-8 HCAPLUS

CN Neodecanoic acid, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



RN 118416-46-9 HCAPLUS

CN Peroxide, (1,4-dioxo-1,4-butanediyl)bis(1-oxodecyl) (9CI) (CA INDEX  
NAME)



L113 ANSWER 6 OF 11 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2003:242661 HCAPLUS Full-text

DN 138:274065

TI Secondary lithium polymer electrolyte battery and its manufacture

IN Torata, Naoto; Nishijima, Motoaki; Nishimura, Naoto

PA Sharp Kabushiki Kaisha, Japan

SO PCT Int. Appl., 48 pp.

CODEN: PIXXD2

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003026056	A1	20030327	WO 2002-JP9532	20020917 <--
	W: CN, IN, KR, US				
	RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR				
	JP 2003092140	A	20030328	JP 2001-282603	20010918 <--
	JP 3976529	B2	20070919		
	CN 1555591	A	20041215	CN 2002-818242	20020917 <--
	TW 561641	B	20031111	TW 2002-91121330	20020918 <--
PRAI	JP 2001-282603	A	20010918		

AB The battery has a polymer electrolyte layer, comprising a Li<sup>+</sup> conductive polymer gel, between a cathode and an anode; and is manufactured by forming a precursor solution containing  $\geq 1$  polymerizable monomer, a Li salt, a nonaq. organic solvent mixture, and 500-10,000 ppm photoinitiator initiating polymerization reaction by UV radiation; impregnating the cathode and/or the anode and a substrate with the precursor solution, and polymerizing the polymerizable monomer by UV radiation with illuminance  $\geq 30$  mW/cm<sup>2</sup> for 0.1-20 s. to form the polymer electrolyte layer. By optimizing the concentration of the photoinitiator and the UV radiation illuminance, the battery characteristics and productivity can be improved.

IC B01M0010-40

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST secondary lithium battery polymer electrolyte manuf;  
photoinitiator concn UV radiation illuminance

IT Polyethers, uses

RL: DEV (Device component use); USES (Uses)  
(acrylates; manufacture of polymer electrolytes using photoinitiator and UV radiation with controlled concentration and illuminance for secondary

lithium batteries)

IT Secondary batteries

(lithium; manufacture of polymer electrolytes using photoinitiator and UV radiation with controlled concentration and illuminance for secondary lithium batteries)

IT Battery electrolytes

(manufacture of polymer electrolytes using photoinitiator and UV

radiation with controlled concentration and illuminance for secondary lithium batteries)

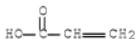
IT 947-19-3, 1-Hydroxy-cyclohexyl-phenylketone 24650-42-8,  
2,2-Dimethoxy-2-phenylacetophenone 75980-60-8 145052-34-2,  
Bis(2,6-dimethoxybenzoyl)-2,4,4-trimethyl-pentylphosphine oxide  
RL: CAT (Catalyst use); USES (Uses)  
(manufacture of polymer electrolytes using photoinitiator and UV  
radiation with controlled concentration and illuminance for secondary  
lithium batteries)

IT 79-10-7D, Acrylic acid, esters, polymers 96-48-0,  
 $\gamma$ -Butyrolactone 96-49-1, Ethylene carbonate 872-36-6, Vinylene  
carbonate 9003-11-6, Ethylene oxide-propylene oxide copolymer  
12190-79-3, Cobalt lithium oxide (CoLiO<sub>2</sub>)  
14283-07-9, Lithium tetrafluoroborate 21324-40-3  
, Lithium hexafluorophosphate 26748-41-4  
RL: DEV (Device component use); USES (Uses)  
(manufacture of polymer electrolytes using photoinitiator and UV  
radiation with controlled concentration and illuminance for secondary  
lithium batteries)

IT 7782-42-5, Graphite, uses  
RL: DEV (Device component use); USES (Uses)  
(synthetic, amorphous; manufacture of polymer electrolytes using  
photoinitiator and UV radiation with controlled concentration and  
illuminance for secondary lithium batteries)

IT 79-10-7D, Acrylic acid, esters, polymers 9003-11-6,  
Ethylene oxide-propylene oxide copolymer 12190-79-3, Cobalt  
lithium oxide (CoLiO<sub>2</sub>) 14283-07-9, Lithium  
tetrafluoroborate 21324-40-3, Lithium  
hexafluorophosphate 26748-41-4  
RL: DEV (Device component use); USES (Uses)  
(manufacture of polymer electrolytes using photoinitiator and UV  
radiation with controlled concentration and illuminance for secondary  
lithium batteries)

RN 79-10-7 HCPLUS  
CN 2-Propenoic acid (CA INDEX NAME)



RN 9003-11-6 HCPLUS  
CN Oxirane, 2-methyl-, polymer with oxirane (CA INDEX NAME)

CM 1

CRN 75-56-9  
CMF C<sub>3</sub> H<sub>6</sub> O



CM 2

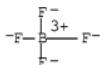
CRN 75-21-8  
 CMF C2 H4 O



RN 12190-79-3 HCAPLUS  
 CN Cobalt lithium oxide (CoLiO<sub>2</sub>) (CA INDEX NAME)

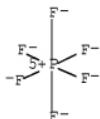
Component	Ratio	Component
		Registry Number
O	2	17778-80-2
Co	1	7440-48-4
Li	1	7439-93-2

RN 14283-07-9 HCAPLUS  
 CN Borate(1-), tetrafluoro-, lithium (1:1) (CA INDEX NAME)



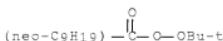
● Li<sup>+</sup>

RN 21324-40-3 HCAPLUS  
 CN Phosphate(1-), hexafluoro-, lithium (1:1) (CA INDEX NAME)



● Li<sup>+</sup>

RN 26748-41-4 HCAPLUS  
 CN Neodecaneperoxoic acid, 1,1-dimethylethyl ester (CA INDEX NAME)



## RETABLE

Referenced Author (RAU)	Year	VOL	PG	Referenced Work (RWK)	Referenced File
		(RPY)	(RVL)	(RPG)	
Bainonikusu Kabushiki Ka	2001			JP 2001210380 A	HCAPLUS
Japan Energy Corp	1997			JP 09-185962 A	HCAPLUS
Nippon Kayaku Co Ltd	2000			JP 200080138 A	
Ricoh Co Ltd	1998			JP 10-218913 A	HCAPLUS
Sanyo Electric Co Ltd	1997			JP 09-97617 A	HCAPLUS
Yamada	2001			JP 2001167743 A	HCAPLUS
Yamada	2001			US 20015561 A1	

L113 ANSWER 7 OF 11 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2002:754752 HCAPLUS Full-text

DN 137:281874

TI Secondary polymer electrolyte lithium battery and its manufacture

IN Nishijima, Motoaki; Torata, Naoto; Nishimura, Naoto; Mitate, Takehito

PA Sharp Kabushiki Kaisha, Japan

SO PCT Int. Appl., 67 pp.

CODEN: PIXXD2

DT Patent

LA Japanese

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI WO 2002078114	A1	20021003	WO 2002-JP2872	20020325 <--
W: CN, IN, JP, KR, US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL,				
PT, SE, TR				
CN 1528028	A	20040908	CN 2002-807102	20020325 <--
TW 554560	B	20030921	TW 2002-91106006	20020327 <--

PRAI JP 2001-90865	A	20010327	<--
JP 2001-122095	A	20010420	<--

AB The battery has a solid electrolyte, containing a porous material having light transmittance  $\geq 50\%$ , an organic electrolyte solution, and a polymer, adhered on the battery cathode or anode. The porous material is preferably a nonwoven fabric. The battery is prepared by: impregnating a porous material with polymer electrolyte precursor containing polymerizable monomer(s), a Li salt, an optical initiator, and a thermal initiator; laminating the impregnated material with a cathode or an anode; primarily polymerizing the precursor under light illumination at 30-100°; stacking the other electrode on the prepolymerd. layer; and polymerizing at 30-100°.

IC H01M0610-40

ICS H01M0604-02; H01M0004-04; H01M0004-56

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

ST secondary lithium battery polymer electrolyte manuf;

optical polymn lithium battery electrolyte manuf;

thermal polymn lithium battery electrolyte manuf

IT Polyester fibers, uses

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)

(manufacture of polymer electrolytes containing nonwoven fabric substrates on electrodes for secondary lithium batteries)

IT Battery electrolytes

(mixed initiators in manufacture of polymer electrolytes with nonwoven substrates for secondary lithium batteries  
)

IT 9003-11-6, Ethylene oxide-propylene oxide copolymer  
 111459-11-1, Ethylene oxide-propylene oxide copolymer, diacrylate,  
 polymer  
 RL: CPS (Chemical process); DEV (Device component use); PEP (Physical,  
 engineering or chemical process); PROC (Process); USES (Uses)  
 (manufacture of polymer electrolytes containing nonwoven fabric substrates  
 on  
 electrodes for secondary lithium batteries)

IT 96-48-0,  $\gamma$ -Butyrolactone 96-49-1, Ethylene carbonate  
 21324-40-3, Lithium hexafluorophosphate  
 RL: DEV (Device component use); PEP (Physical, engineering or chemical  
 process); PYP (Physical process); PROC (Process); USES (Uses)  
 (manufacture of polymer electrolytes containing nonwoven fabric substrates  
 on  
 electrodes for secondary lithium batteries)

IT 947-19-3, 1-Hydroxy-cyclohexyl phenyl ketone 24650-42-8,  
 2,2-Dimethoxy-2-phenylacetophenone 75980-60-8, 2,4,6-  
 Trimethylbenzoyldiphenylphosphine oxide 162881-26-7,  
 Bis-(2,4,6-trimethylbenzoyl)-phenylphosphine oxide 464934-75-6  
 RL: CAT (Catalyst use); USES (Uses)  
 (optical initiators in manufacture of polymer electrolytes with  
 nonwoven substrates for secondary lithium batteries  
 )

IT 3851-87-4, 3,5,5-Trimethylhexanoyl peroxide 26748-41-4,  
 tert-Butyl peroxy neodecanoate 464934-76-7 465532-67-6  
 RL: CAT (Catalyst use); USES (Uses)  
 (thermal initiators in manufacture of polymer electrolytes with  
 nonwoven substrates for secondary lithium batteries  
 )

IT 9003-11-6, Ethylene oxide-propylene oxide copolymer  
 111459-11-1, Ethylene oxide-propylene oxide copolymer, diacrylate,  
 polymer  
 RL: CPS (Chemical process); DEV (Device component use); PEP (Physical,  
 engineering or chemical process); PROC (Process); USES (Uses)  
 (manufacture of polymer electrolytes containing nonwoven fabric substrates  
 on  
 electrodes for secondary lithium batteries)

RN 9003-11-6 HCPLUS

CN Oxirane, 2-methyl-, polymer with oxirane (CA INDEX NAME)

CM 1

CRN 75-56-9

CMF C3 H6 O



CM 2

CRN 75-21-8

CMF C2 H4 O



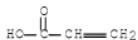
RN 111459-11-1 HCPLUS  
 CN Oxirane, methyl-, polymer with oxirane, di-2-propenoate, homopolymer (9CI)  
 (CA INDEX NAME)

CM 1

CRN 52503-44-3  
 CMF (C<sub>3</sub> H<sub>6</sub> O . C<sub>2</sub> H<sub>4</sub> O)x . 2 C<sub>3</sub> H<sub>4</sub> O<sub>2</sub>

CM 2

CRN 79-10-7  
 CMF C<sub>3</sub> H<sub>4</sub> O<sub>2</sub>



CM 3

CRN 9003-11-6  
 CMF (C<sub>3</sub> H<sub>6</sub> O . C<sub>2</sub> H<sub>4</sub> O)x  
 CCI PMS

CM 4

CRN 75-56-9  
 CMF C<sub>3</sub> H<sub>6</sub> O



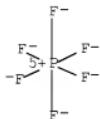
CM 5

CRN 75-21-8  
 CMF C<sub>2</sub> H<sub>4</sub> O



IT 21324-40-3, Lithium hexafluorophosphate  
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)

on (manufacture of polymer electrolytes containing nonwoven fabric substrates  
 electrodes for secondary lithium batteries)  
 RN 21324-40-3 HCPLUS  
 CN Phosphate(1-), hexafluoro-, lithium (1:1) (CA INDEX NAME)

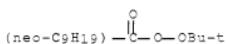


● Li+

IT 3851-87-4, 3,5,5-Trimethylhexanoyl peroxide 26748-41-4,  
 tert-Butyl peroxy neodecanoate 464934-76-7 465532-67-6  
 RL: CAT (Catalyst use); USES (Uses)  
 (thermal initiators in manufacture of polymer electrolytes with  
 nonwoven substrates for secondary lithium batteries  
 )  
 RN 3851-87-4 HCPLUS  
 CN Peroxide, bis(3,5,5-trimethyl-1-oxohexyl) (CA INDEX NAME)



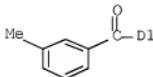
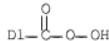
RN 26748-41-4 HCPLUS  
 CN Neodecaneperoxic acid, 1,1-dimethylethyl ester (CA INDEX NAME)



RN 464934-76-7 HCPLUS  
 CN Propaneperoxyic acid, 2,2-dimethyl-, hexyl ester (CA INDEX NAME)



RN 465532-67-6 HCPLUS  
 CN Benzenecarbperoxyic acid, (3-methylbenzoyl)- (9CI) (CA INDEX NAME)



## RETABLE

Referenced Author (RAU)	Year (RPY)	VOL (RVL)	PG (RPG)	Referenced Work (RWK)	Referenced File
Dai-Ichi Kogyo Seiyaku	1996			JP 08315855 A	HCAPLUS
Hydro-Quebec	1998			JP 2000507387 A	
Hydro-Quebec	1998			US 6280882 B1	HCAPLUS
Hydro-Quebec	1998			EP 890192 A1	HCAPLUS
Hydro-Quebec	1998			WO 9832183 A1	HCAPLUS
Mitsubishi Chemical Cor	2000			JP 2000082496 A	HCAPLUS
Sanyo Electric Co Ltd	1997			JP 09129246 A	HCAPLUS
Sharp Corp	1992			JP 04368778 A	HCAPLUS
Sharp Corp	1992			EP 520667 A1	HCAPLUS
Sharp Corp	1992			US 5344726 A	HCAPLUS
Toa Nenryo Kogyo Kabush	1989			JP 01158051 A	HCAPLUS
Toa Nenryo Kogyo Kabush	1989			EP 309259 A2	HCAPLUS
Toa Nenryo Kogyo Kabush	1989			US 4849311 A	HCAPLUS

L113 ANSWER 8 OF 11 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 2002:257849 HCAPLUS Full-text

DN 137:127466

TI Solid polymer electrolytes of PEO system by UV-curing

AU Qiao, Linzhao; Wei, Jie

CS College of Material Science and Engineering, Beijing University of Chemical Engineering, Beijing, 100029, Peop. Rep. China

SO Huagong Xuebao (Chinese Edition) (2002), 53(1), 96-99

CODEN: HUKHAI; ISSN: 0438-1157

PB Huaxue Gongye Chubanshe, Huagong Xuebao Bianjibu

DT Journal

LA Chinese

AB Polyethylene glycol diacrylates (PEGDA) monomers, which contain double bond on the terminal group of polyethylene glycol (PEG) and can be used in synthesis of UV-curable solid polymer electrolytes (SPE), were prepared through esterification of PEG and acrylic acid. A cured conductive polymer film consisting of lithium salt was then obtained by irradiation with UV rays. The factors affecting film-forming, photosensitivity and conductance were studied. From expts., while  $\text{Li}/\text{O} = 1/6$  and  $n = 18$ , the ionic conductivity of the SPE membrane could reach  $10^{-5} \text{ S.cm}^{-1}$  at room temperature and its performance was relatively good.

CC 52-2 (Electrochemical, Radiation, and Thermal Energy Technology)

ST solid polymer electrolyte membrane lithium manuf PEO UV curing

IT Ionic conductivity

Polymer electrolytes

(manufacturing of solid polymer electrolytes membranes of PEO system by

UV-curing)  
 IT 7791-03-9, Lithium perchlorate  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (manufacturing of solid polymer electrolytes membranes of PEO system by  
 UV-curing)  
 IT 189146-15-4, Darocur 4265  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (photoinitiator; manufacturing of solid polymer electrolytes  
 membranes of PEO system by UV-curing)  
 IT 79-10-7, Acrylic acid, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (polyethylene glycol diacrylates monomer prepared through esterification  
 of PEG and; for manufacturing of solid polymer electrolytes membranes of  
 PEO  
 system by UV-curing)  
 IT 25322-68-3, PEG  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (polyethylene glycol diacrylates monomer prepared through esterification  
 of acrylic acid and; for manufacturing of solid polymer electrolytes  
 membranes of PEO system by UV-curing)  
 IT 26570-48-9P, Polyethylene glycol diacrylate  
 RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation);  
 RACT (Reactant or reagent)  
 (prepared through esterification of PEG and acrylic acid; for manufacturing  
 of  
 solid polymer electrolytes membranes of PEO system by UV-curing)  
 IT 7791-03-9, Lithium perchlorate  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (manufacturing of solid polymer electrolytes membranes of PEO system by  
 UV-curing)  
 RN 7791-03-9 HCAPLUS  
 CN Perchloric acid, lithium salt (1:1) (CA INDEX NAME)



● Li

IT 79-10-7, Acrylic acid, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (polyethylene glycol diacrylates monomer prepared through esterification  
 of PEG and; for manufacturing of solid polymer electrolytes membranes of  
 PEO  
 system by UV-curing)  
 RN 79-10-7 HCAPLUS  
 CN 2-Propenoic acid (CA INDEX NAME)



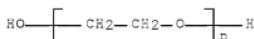
IT 25322-68-3, PEG

RL: RCT (Reactant); RACT (Reactant or reagent)

(polyethylene glycol diacrylates monomer prepared through esterification of acrylic acid and; for manufacturing of solid polymer electrolytes membranes of PEO system by UV-curing)

RN 25322-68-3 HCPLUS

CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -hydro- $\omega$ -hydroxy- (CA INDEX NAME)



IT 26570-48-9P, Polyethylene glycol diacrylate

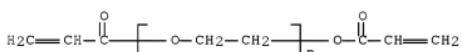
RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation);

RACT (Reactant or reagent)

(prepared through esterification of PEG and acrylic acid; for manufacturing of solid polymer electrolytes membranes of PEO system by UV-curing)

RN 26570-48-9 HCPLUS

CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -(1-oxo-2-propen-1-yl)- $\omega$ -(1-oxo-2-propen-1-yl)oxy- (CA INDEX NAME)



L113 ANSWER 9 OF 11 HCPLUS COPYRIGHT 2008 ACS on STN

AN 1992:491879 HCPLUS Full-text

DN 117:91879

OREF 117:16033a,16036a

TI Functionalized polyether-type ion-conducting polymer electrolytes

IN Motogami, Kenji; Mori, Shigeo

PA Daiichi Kogyo Seiyaku K. K., Japan

SO Jpn. Kokai Tokkyo Koho, 12 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 04068064	A	19920303	JP 1990-180355	19900706 <--
JP 2923542	B2	19990726		

PRAI JP 1990-180355 19900706 <--

AB The title polyethers, being used with soluble electrolyte salts and O- and/or N-containing organic solvents, have low glass-transition temperature (Tg), and are amorphous polymers obtained by the crosslinking of the active H-containing compound-initiated block or random addition products of glycidyl ethers and C $\geq$ 3 alkylene oxides which bear terminal functional groups. The amorphous nature of the polymers can prevent the sudden decrease of conductivity at low temperature as seen in crystalline similar polymers. Thus, the KOH-catalyzed reaction of glycidyl initiator 15 with 1,2-epoxybutane 370, then with glycidyl triethylene glycol Me ether 285 g gave a polyether which was esterified with acrylic acid (I) at the OH/I equivalent weight ratio 1.1:1. Heating 3.6 g the acrylate polyether- polyol with 0.12 g LiClO<sub>4</sub> and a MEK solution of

photoinitiator under N at 80° for 1 h and in vacuo for 8 h to remove MEK, and impregnating into 1.8 g propylene carbonate gave a title product which showed ion conductivity 1.8x10<sup>-4</sup>, 1.0x10<sup>-4</sup>, and 5.2x10<sup>-5</sup> s/cm at 20, 0 and -20°, resp.

IC ICM C08L0071-02  
ICS C08F0299-02; C08G0018-48; H01B0001-06; H01M0006-18;  
H01M0010-40

CC 38-3 (Plastics Fabrication and Uses)  
Section cross-reference(s): 72

ST complex polyether polyol crosslinked electrolyte;  
polyoxyalkylene polyol acrylate polymer electrolyte;  
lithium perchlorate polyoxyalkylene acrylate polymer

IT Electric conductors  
  Polyelectrolytes  
RL: SPN (Synthetic preparation); PREP (Preparation)  
  (preparation of, amorphous polyoxyalkylene-polyol-based acrylic  
  polymers or urethane polymer complexes for)

IT Polyoxyalkylenes, preparation  
RL: SPN (Synthetic preparation); PREP (Preparation)  
  (acrylic, polyol-initiated, electrolytes, preparation of  
  ion-conducting and amorphous)

IT Acrylic polymers, preparation  
Urethane polymers, preparation  
RL: SPN (Synthetic preparation); PREP (Preparation)  
  (polyoxyalkylene-, polyol-initiated, electrolytes,  
  preparation of ion-conducting and amorphous)

IT 50-70-4DP, Sorbitol, ether with mixed oxirane compds.,  
methacrylated, polymers, lithium complexes 79-41-4DP,  
ester with polymers of C12  $\alpha$ -olefin oxide and glycidyl ether  
initiated by sorbitol, polymers, lithium complex  
80-05-7DP, ether with mixed oxirane compds., polymers, polymer with  
polyisocyanates, lithium complexes 107-21-1DP,  
1,2-Ethanediol, ether with mixed oxirane compds., methacrylated, polymers,  
lithium complexes 822-06-0DP, polymers with polyether-  
polyols, lithium complex 930-37-0DP, Methyl glycidyl  
ether, polymers with C4  $\alpha$ -olefin oxide, ether with diols,  
methacrylated, polymers, lithium complexes 4067-16-7DP,  
Pentaethylenehexamine, ether with mixed oxirane compds., methacrylated,  
polymers, lithium complexes 7439-93-2DP,  
Lithium, polyether-polyol-based polymer complexes  
14435-47-3DP, polymers with C6  $\alpha$ -olefin oxide, ether with  
polyamines, methacrylated, polymers, lithium complexes  
40349-67-5DP, polymers with C12  $\alpha$ -olefin oxide, ether with sorbitol,  
methacrylates, polymers, lithium complexes 134966-38-4DP,  
polymers with C12  $\alpha$ -olefin oxide, ether with polyamines,  
methacrylated, polymers, lithium complexes 142661-73-2DP  
, lithium complex 142743-34-0DP, lithium  
complex 142743-35-9DP, lithium complex 142743-36-0DP,  
lithium complex 142953-73-9DP, lithium complex  
142953-74-0DP, triethers with ethanolamine, 4-ethenylbenzoate ester,  
polymers, lithium complexes  
RL: SPN (Synthetic preparation); PREP (Preparation)  
  (electrolytes, preparation of ion-conducting and amorphous)

IT 96-48-0 108-32-7, Propylene carbonate  
RL: NUU (Other use, unclassified); USES (Uses)  
  (solvents, for amorphous polypolyoxyalkylene-polyol-based  
  acrylic polymers or urethane polymer lithium complexes)

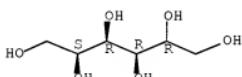
IT 50-70-4DP, Sorbitol, ether with mixed oxirane compds.,  
methacrylated, polymers, lithium complexes 79-41-4DP,

ester with polymers of C12  $\alpha$ -olefin oxide and glycidyl ether initiated by sorbitol, polymers, lithium complex 107-21-1DP, 1,2-Ethanediol, ether with mixed oxirane compds., methacrylated, polymers, lithium complexes 7439-93-2DP, Lithium, polyether-polyol-based polymer complexes 142661-73-2DP, lithium complex 142743-34-6DP, lithium complex  
 RL: SPN (Synthetic preparation); PREP (Preparation) (electrolytes, preparation of ion-conducting and amorphous)

RN 50-70-4 HCAPLUS

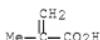
CN D-Glucitol (CA INDEX NAME)

Absolute stereochemistry.



RN 79-41-4 HCAPLUS

CN 2-Propenoic acid, 2-methyl- (CA INDEX NAME)



RN 107-21-1 HCAPLUS

CN 1,2-Ethanediol (CA INDEX NAME)



RN 7439-93-2 HCAPLUS

CN Lithium (CA INDEX NAME)



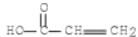
RN 142661-73-2 HCAPLUS

CN Oxirane, ethyl-, polymer with 2,5,8,11-tetraoxadodec-1-yloxirane, ether with 1,2,3-propanetriol (3:1), 2-propenoate, block (9CI) (CA INDEX NAME)

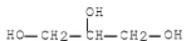
CM 1

CRN 79-10-7

CMF C3 H4 O2



CM 2

CRN 56-81-5  
CMF C3 H8 O3

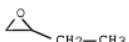
CM 3

CRN 176022-70-1  
CMF (C10 H20 O5 . C4 H8 O)x  
CCI PMS

CM 4

CRN 73692-54-3  
CMF C10 H20 O5

CM 5

CRN 106-88-7  
CMF C4 H8 O

RN 142743-34-8 HCPLUS  
 CN Oxirane, butyl-, polymer with [(2-(2-methoxyethoxy)ethoxy)methyl]oxirane, ether with 1,2,3-propanetriol (3:1), 2-propenoate, homopolymer, block (9CI) (CA INDEX NAME)

CM 1

CRN 142661-72-1  
CMF (C8 H16 O4 . C6 H12 O)x . 1/3 C3 H8 O3 . x C3 H4 O2

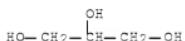
CM 2

CRN 79-10-7

CMF C3 H4 O2



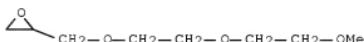
CM 3

CRN 56-81-5  
CMF C3 H8 O3

CM 4

CRN 163478-86-2  
CMF (C8 H16 O4 . C6 H12 O)x  
CCI PMS

CM 5

CRN 71712-93-1  
CMF C8 H16 O4

CM 6

CRN 1436-34-6  
CMF C6 H12 O

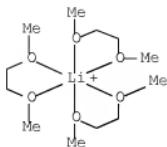
L113 ANSWER 10 OF 11 HCAPLUS COPYRIGHT 2008 ACS on STN  
 AN 1987:179845 HCAPLUS [Full-text](#)  
 DN 106:179845  
 OREF 106:29149a,29152a  
 TI Laminar lithium battery  
 IN Nagai, Tatsu; Kajita, Kozo; Manabe, Toshikatsu

PA Hitachi Maxell, Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 6 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 62020263	A	19870128	JP 1985-158949	19850718 <--
PRAI JP 1985-158949		19850718		
AB	A viscous mixture of a Li salt and Li polymethacrylate is used as electrolyte in laminar Li batteries. A solution of LiBPh4.3MeOC2H4OMe 11.2, propylene carbonate 23.78, and Li methacrylate monomer 5.0 parts was added with 0.05 parts benzoyl peroxide to initiate polymerization at 100° in a sealed metal reactor for 3 h. The obtained electrolyte had an ionic conductivity of 10-3 S/cm. A mixture of TiS2-50% electrolyte was screen printed on a stainless steel plate to form a 100-μ cathode layer surrounded by a polypropylene frame, a 25-μ corrugated porous polypropylene separator impregnated with the electrolyte was laid on the cathode, followed by a 80-μ Li-Al alloy. A stainless steel anode collector was sealed to the frame on the cathode plate via a modified-polyolefin hot-melt binder to form a battery. No leaking of the electrolyte was observed during the assembling process. This battery had a much longer cycle life than a battery using an electrolyte without the polymer.			
IC ICM R01M0010-10				
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)				
Section cross-reference(s): 38				
ST lithium tetraphenylborate polymethacrylate battery electrolyte				
IT Batteries, secondary (lithium, electrolytes from mixts. of lithium tetraphenylborate-dimethoxyethane adduct and lithium polymethacrylate for)				
IT 75965-35-4				
RL: USES (Uses) (electrolytes from mixts. of lithium polymethacrylate and, for lithium batteries)				
IT 29297-91-4, Lithium polymethacrylate				
RL: USES (Uses) (electrolytes from mixts. of lithium tetraphenylborate-dimethoxyethane adduct and, for lithium batteries)				
IT 75965-35-4				
RL: USES (Uses) (electrolytes from mixts. of lithium polymethacrylate and, for lithium batteries)				
RN 75965-35-4 HCAPLUS				
CN Lithium(1+), tris[1,2-di(methoxy-κO)ethane]-, (OC-6-11)-, tetraphenylborate(1-) (9CI) (CA INDEX NAME)				

CM 1

CRN 75964-74-8  
 CMF C12 H30 Li O6  
 CCI CCS

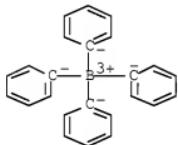


CM 2

CRN 4358-26-3

CMF C24 H20 B

CCI CCS



IT 29297-91-4, Lithium polymethacrylate

RL: USES (Uses)

(electrolytes from mixts. of lithium tetraphenylborate-dimethoxyethane adduct and, for lithium batteries)

RN 29297-91-4 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, homopolymer, lithium salt (CA INDEX NAME)

CM 1

CRN 25087-26-7

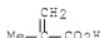
CMF (C4 H6 O2)x

CCI PMS

CM 2

CRN 79-41-4

CMF C4 H6 O2



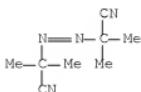
L113 ANSWER 11 OF 11 HCAPLUS COPYRIGHT 2008 ACS on STN

AN 1986:415981 HCAPLUS Full-text

DN 105:15981

OREF 105:2569a,2572a

TI Poly[lithium methacrylate-co-oligo(oxyethylene)methacrylate] as a solid electrolyte with high ionic conductivity  
 AU Kobayashi, Norihisa; Uchiyama, Masahiro; Tsuchida, Eishun  
 CS Dep. Polym. Chem., Waseda Univ., Tokyo, 160, Japan  
 SO Solid State Ionics (1985), 17(4), 307-11  
 CODEN: SSIOD3; ISSN: 0167-2738  
 DT Journal  
 LA English  
 AB Poly[lithium methacrylate-co-oligo(oxyethylene)methacrylate] film was prepared as a polymeric solid electrolyte which showed a Li ionic conductivity of 2 + 10<sup>-7</sup> (S/cm). This film contains no organic plasticizer nor low-mol. weight Li salts and was shown to be a single-ion conductor in the solid state. Li<sup>+</sup> ionic conductivity was deeply influenced by the glass transition temperature and Li methacrylate content of the film. A rechargeable battery composed of metallic Li/this film/graphite showed better characteristics than any previously reported systems using polymeric solid electrolytes.  
 CC 76-2 (Electric Phenomena)  
 Section cross-reference(s): 36  
 ST lithium methacrylate polymer electrolyte;  
 oligooxyethylenemethacrylate polymer cond; oxyethylenemethacrylate polymer cond  
 IT Batteries, primary  
 (from poly[lithium methacrylate-oligo(oxyethylene)methacrylate  
 e])  
 IT Polymerization  
 (of lithium methacrylate with oligo(oxyethylene)methacrylate  
 for ionic conductors)  
 IT Electric conductors  
 (ionic, from poly[lithium methacrylate-  
 oligo(oxyethylenemethacrylate)])  
 IT Electric conductivity and conduction  
 (ionic, in poly[lithium methacrylate-co-  
 oligo(oxyethylene)methacrylate] films)  
 IT Electric conductivity and conduction  
 (ionic, of poly[lithium methacrylate-  
 oligo(oxyethylene)methacrylate])  
 IT 76-67-1 7791-03-9 13234-23-6  
 25179-23-1  
 RL: USES (Uses)  
 (in ionic conductor polymer preparation)  
 IT 103285-01-4P  
 RL: PREP (Preparation)  
 (preparation of, as ionic conductor)  
 IT 102814-54-0  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (solid electrolyte, with high ionic conductivity)  
 IT 17341-24-1, properties  
 RL: PRP (Properties)  
 (transport number of, in lithium methacrylate-  
 oligo(oxyethylene)methacrylate copolymer)  
 IT 76-67-1 7791-03-9 13234-23-6  
 25179-23-1  
 RL: USES (Uses)  
 (in ionic conductor polymer preparation)  
 RN 78-67-1 HCAPLUS  
 CN Propanenitrile, 2,2'-(1,2-diazenediyi)bis[2-methyl- (CA INDEX NAME)

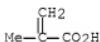


RN 7791-03-9 HCPLUS  
 CN Perchloric acid, lithium salt (1:1) (CA INDEX NAME)



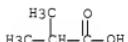
● Li

RN 13234-23-6 HCPLUS  
 CN 2-Propenoic acid, 2-methyl-, lithium salt (1:1) (CA INDEX NAME)



● Li

RN 25179-23-1 HCPLUS  
 CN Propanoic acid, 2-methyl-, lithium salt (9CI) (CA INDEX NAME)

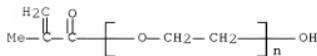


● Li

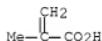
IT 103285-01-4P  
 RL: PREP (Preparation)  
 (preparation of, as ionic conductor)  
 RN 103285-01-4 HCPLUS  
 CN 2-Propenoic acid, 2-methyl-, lithium salt, polymer with  
 $\alpha$ -(2-methyl-1-oxo-2-propenyl)- $\omega$ -hydroxypoly(oxy-1,2-  
 ethanediyl) (9CI) (CA INDEX NAME)

CM 1

CRN 25736-86-1  
 CMF  $(\text{C}_2\text{H}_4\text{O})_n$  C4 H6 O2  
 CCI PMS



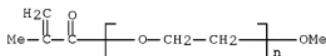
CM 2

CRN 13234-23-6  
CMF C4 H6 O2 . Li

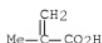
● Li

IT 102814-54-0  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (solid electrolyte, with high ionic conductivity)  
 RN 102814-54-0 HCAPLUS  
 CN 2-Propenoic acid, 2-methyl-, lithium salt, polymer with  
 $\alpha$ -(2-methyl-1-oxo-2-propenyl)- $\omega$ -methoxypoly(oxy-1,2-  
 ethanediyl) (9CI) (CA INDEX NAME)

CM 1

CRN 26915-72-0  
CMF (C2 H4 O)n C5 H8 O2  
CCI PMS

CM 2

CRN 13234-23-6  
CMF C4 H6 O2 . Li

● Li

IT 17341-24-1, properties  
 RL: PRP (Properties)  
 (transport number of, in lithium methacrylate-  
 oligo(oxyethylene)methacrylate copolymer)  
 RN 17341-24-1 HCAPLUS  
 CN Lithium, ion (L1+) (CA INDEX NAME)

Li+

=> d his

(FILE 'HOME' ENTERED AT 13:18:42 ON 29 APR 2008)  
 SET COST OFF

FILE 'HCAPLUS' ENTERED AT 13:18:56 ON 29 APR 2008  
 L1 1 S US20040029016/PN OR (US2003-635122# OR KR2003-28968 OR KR2002  
 E HWANG/AU  
 L2 3 S E3  
 E HWANG D/AU  
 L3 49 S E3,E4  
 E HWANG DUCK/AU  
 L4 24 S E4,E11  
 E HWANG NAME/AU  
 L5 14 S E4,E5  
 E DUCK/AU  
 L6 1 S E3  
 E DUCKCHUL/AU  
 E LEE/AU  
 L7 40 S E3  
 E LEE K/AU  
 L8 1431 S E3,E24  
 E LEE KYOUNG/AU  
 L9 78 S E3,E29  
 E LEE KYOUNGHEE/AU  
 L10 1 S E3  
 E LEE NAME/AU  
 L11 303 S E4-E11  
 E KYOUNG/AU  
 E KYOUNGHEE/AU  
 E SAMSU/CO  
 E SAMSSU/CO  
 L12 60862 S E4,E6-E24/CO,PA,CS  
 L13 60872 S SAMSUNG?/CO,PA,CS  
 E E13+ALL  
 L14 62341 S E2+RT OR E138-E146 OR E2-E146/PA,CS  
 L15 1 S L1 AND L2-L14  
 SEL RN

FILE 'REGISTRY' ENTERED AT 13:23:56 ON 29 APR 2008  
 L16 41 S E1-E41  
 L17 6 S 1712-87-4 OR 14666-78-5 OR 52373-75-8 OR 118416-46-9 OR 95732  
 L18 21 S 75-91-2 OR 78-63-7 OR 78-67-1 OR 80-15-9 OR 80-43-3 OR 94-36-  
 L19 27 S L17,L18  
 L20 14 S L16 NOT L19  
 L21 2 S L20 AND LI/ELS

L22                   3 S L16 AND ?LITHIUM?/CNS  
 L23                   1 S L16 AND S/ELS NOT L21,L22  
 L24                   1 S L21 AND LI/MF  
 L25                   1 S L22 AND SULFIDE  
                       E LITHIUM SULFIDE/CN  
 L26                   31 S E3-E8,E10-E17,E19-E25,E43-E54  
 L27                   14334 S (LI/ELS OR LITHIUM OR 7439-93-2/CRN) AND (S/ELS OR SULFUR OR  
 L28                   42 S L27 AND 2/ELC.SUB  
 L29                   46 S L26,L28,L25  
 L30                   11 S L20 NOT L23,L24,L25,L29  
 L31                   3 S L30 AND (C3H8O3 OR C4H10O4 OR C10H22O7)  
 L32                   2 S (ACRYLIC ACID OR METHACRYLIC ACID)/CN  
 L33                   8 S 79-41-4/CRN AND PMS/CI AND 1/NC AND C4H6O2  
 L34                   3 S L33 NOT (DIMER OR PENTAMER OR OC4/ES OR CYCLODEXTRIN)  
 L35                   17 S 79-10-7/CRN AND PMS/CI AND 1/NC AND C3H4O2  
 L36                   3 S L35 AND "(C3H4O2)X"/MF

FILE 'HCAPLUS' ENTERED AT 13:57:11 ON 29 APR 2008  
 L37                   60275 S (L24 OR LITHIUM OR LI) AND (L23 OR S OR SULFUR OR SULPHUR OR  
 L38                   1187 S L29  
 L39                   60346 S L37,L38  
 L40                   3949 S L39 AND H01M/IPC, IC, ICM, ICS  
                       E BATTERY/CT  
 L41                   4037 S L39 AND (E4+OLD,NT OR E5+OLD,NT OR E5+OLD,NT OR E7+OLD,NT)  
                       E E8+ALL  
 L42                   289 S L39 AND (E2+OLD,NT OR E3+OLD,NT OR E4+OLD,NT)  
                       E BATTERIES/CT  
                       E E3+ALL  
 L43                   5406 S L39 AND (E1 OR E2+OLD,NT OR E3+OLD,NT OR E4+OLD,NT OR E5+OLD,  
                       E POLYMER ELECTROLYTE/CT  
                       E E5+ALL  
 L44                   2108 S L39 AND (E9 OR E12+OLD,NT OR E14+OLD,NT)  
 L45                   378 S L39 AND E13+OLD,NT  
 L46                   263 S L39 AND E16+OLD,NT  
 L47                   383 S L39 AND E8+OLD  
 L48                   550 S L39 AND E7+OLD  
 L49                   9053 S L40-L48  
 L50                   69 S L49 AND INITIATOR  
 L51                   140 S L49 AND ?INITIAT?  
                       E INITIATOR/CT  
 L52                   41 S L49 AND L19  
 L53                   166 S L50-L52  
 L54                   8444 S L39 AND (BATTERY OR (FUEL OR ?ELECTR? OR VOLTAIC)()CELL)  
 L55                   47 S L54 AND INITIATOR  
 L56                   111 S L54 AND ?INITIAT?  
 L57                   178 S L53,L55,L56  
 L58                   64 S L57 AND PY<=2003 NOT P/DT  
 L59                   59 S L57 AND (PD<=20030807 OR PRD<=20030807 OR AD<=20030807) AND P  
 L60                   123 S L58,L59  
 L61                   4 S L1-L15 AND L60  
 L62                   123 S L60,L61

FILE 'REGISTRY' ENTERED AT 14:05:37 ON 29 APR 2008

FILE 'HCAPLUS' ENTERED AT 14:05:37 ON 29 APR 2008  
 L63                   TRA L62 1- RN :        2576 TERMS

FILE 'REGISTRY' ENTERED AT 14:05:41 ON 29 APR 2008  
 L64                   2576 SEA L63  
 L65                   2 S L64 AND L34,L36,L32

L66 STR  
 L67 S L66 SAM SUB=L64  
 L68 121 S L66 FUL SUB=L64  
     SAV TEMP L68 LAURA635A/A  
 L69 3 S L68 AND (LI OR K)/ELS AND 2/NC  
 L70 1 S L68 AND C2H4O AND C3H6O AND 3/NC  
 L71 3 S L68 AND (C4H6O2 OR C3H4O2) AND 1/NC  
 L72 2 S L71 NOT 96-33-3

FILE 'HCAPLUS' ENTERED AT 14:16:35 ON 29 APR 2008  
 L73 12 S L62 AND L32,L34,L36,L69,L70,L72  
 L74 1 S L73 AND POLYOL  
 L75 1 S L73 AND POLYHYDR?(L)ALCOHOL  
 L76 0 S L73 AND TRIALKYLOL  
 L77 3 S L73 AND (GLYCEROL OR GLYCERIN?)  
 L78 1 S L73 AND ?ERYTHRITOL?

FILE 'REGISTRY' ENTERED AT 14:18:43 ON 29 APR 2008  
 L79 2 S (GLYCEROL OR ERYTHRITOL)/CN  
 L80 3 S L31,L79  
 L81 501 S L64 AND (C AND H AND O)/ELS AND 3/ELC.SUB  
 L82 431 S L81 NOT L68  
 L83 267 S L82 NOT ACID  
 L84 254 S L83 NOT L19  
 L85 30 S L84 AND (C6H14O6 OR C4H10O4 OR C3H8O3 OR CH4O OR C4H6O2 OR C4  
     SEL RN 2-5 11-13 16-21 23 24 26  
 L86 14 S L85 NOT E1-E16  
 L87 43 S L84 AND (C2H4O OR C3H6O) NOT L85  
     SEL RN 1 19 27-29 33 40 41  
 L88 8 S E17-E24  
 L89 22 S L86,L88,L31

FILE 'HCAPLUS' ENTERED AT 14:31:39 ON 29 APR 2008  
 L90 9 S L73 AND L89  
 L91 9 S L74-L78,L90  
 L92 3 S L73 NOT L91  
 L93 2 S L92 NOT 130:252754/DN  
 L94 14 S L61,L91,L93  
     SEL DN 9 10 12  
 L95 11 S L94 NOT E25-E27

FILE 'REGISTRY' ENTERED AT 14:37:36 ON 29 APR 2008  
 FILE 'HCAPLUS' ENTERED AT 14:37:36 ON 29 APR 2008  
 L96 TRA L95 1- RN : 230 TERMS

FILE 'REGISTRY' ENTERED AT 14:37:36 ON 29 APR 2008  
 L97 230 SEA L96  
 L98 24 S L97 AND (LI/ELS OR ?LITHIUM?/CNS OR 7439-93-2/CRN)  
 L99 27 S L97 AND (S/ELS OR SULFUR OR SULFIDE OR 7704-34-9/CRN)  
 L100 5 S L98 AND L99  
 L101 19 S L98 NOT L100  
 L102 22 S L99 NOT L100  
 L103 1 S L102 AND S/MF  
 L104 27 S L97 AND L119  
 L105 12 S L97 AND ?PEROX?/CNS NOT L104  
 L106 11 S L105 NOT C2H4O  
 L107 18 S L97 AND L68  
 L108 15 S L107 NOT N/ELS  
 L109 7 S L97 AND L89

L110        149 S L97 NOT L100,L101,L103,L104,L106,L108,L109  
 L111        3 S L110 AND (C3H5CLO OR C2H6O2)  
 L112        2 S L111 NOT N/ELS

FILE 'HCAPLUS' ENTERED AT 14:46:31 ON 29 APR 2008  
 L113        11 S L95 AND L100,L101,L103,L104,L106,L108,L109,L112

FILE 'HCAPLUS' ENTERED AT 14:46:59 ON 29 APR 2008

=> fil reg  
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 DICTIONARY FILE UPDATES: 28 APR 2008 HIGHEST RN 1017984-01-8

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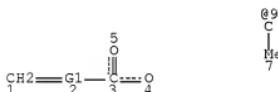
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 experimental property data in the original document. For information  
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<http://www.cas.org/support/stngen/stndoc/properties.html>

=> d 166  
 L66 HAS NO ANSWERS  
 L66            STR



VAR G1=CH/9  
 NODE ATTRIBUTES:  
 DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
 RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 7

STEREO ATTRIBUTES: NONE

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